

REMARKS

Correction of Non-substantive Formalities

The specification has been amended to address certain informalities and to respond to the Examiner's objections to the form of the disclosure. For example, the specification and abstract have been amended to correct the spelling of "Viterbi" in accordance with the Examiner's request.

The specification is objected to as failing to provide proper antecedent basis for "a specific language" in claim 5. Claim 5 has been amended to delete the word "specific," thereby obviating the Examiner's objection regarding same. Support for "language" may be found at least at page 3, line 5 and at page 4, line 17 of the specification.

The specification is objected to as failing to provide a basis for differentiation between the high order or "higher-order" vectors of claims 5, 7, 8, 9 and 10 and other vectors. Applicants respectfully disagree. Applicant's respectfully suggest that the modifiers "high order" or "higher-order" are mathematical modifiers used interchangeably to refer to any order greater than 1. Thus, for example, in a mathematical context, a Calculus textbook may introduce first derivatives, and follow with a section on "higher order" derivatives such as second derivatives, third derivatives to nth derivatives. See, e.g., M.A. Munem & D.J. Foulis, Calculus with Analytical Geometry, § 2.1 et seq. and § 2.10, 2nd ed., Worth Publishers, 1984 (introducing second and greater order derivatives starting at section 2.10 entitled "Higher-Order Derivatives"). See also, an online text being prepared by Dr. Frank Jones at Rice University at <http://www.owl.net.rice.edu/~fjones/> (introducing single derivatives in Chapter 2, followed by a Chapter 3 entitled "Higher Order Derivatives" and introducing "orders greater than one". Using this common meaning of "higher-order," we can see that any "higher-order vector" refers to any vector having an order greater than one. The same is true for "higher-order polynomials." Thus, "higher-order vectors" include 2nd order vectors, 3rd order vectors, 4th order vectors, and so on, but not 1st order vectors.

“Higher-order polynomials” include 2nd order polynomials, 3rd order polynomials, 4th order polynomials, and so on, but not 1st order polynomials. Moreover, the inclusion of the term “higher-order” in the claims is done intentionally using the common sense of the word known to those of ordinary skill in the art, and contrary to the Examiner’s statement, the term should be taken into account when construing the scope of the claims. Given the foregoing, Applicant’s respectfully request that the Examiner withdraw this objection.

The specification is objected to as failing to provide proper antecedent basis for “4th order vectors” in claims 6 and 7. Applicant’s respectfully disagree. Support for 4th order vectors can be found in the specification at least at page 4, line 27, et seq. Various occurrences of “4th order polynomials” may also be considered support for “4th order vectors” since a vector may sometimes be conceptualized as an array of coefficients with polynomial factors being implicit in the structure of the array. Given the foregoing, Applicant’s respectfully request that the Examiner withdraw this objection.

The specification is objected to as failing to provide proper antecedent basis for “single command vector” in claims 8 and 9. Applicants respectfully disagree. The term “single command vector” commonly refers to a single (i.e., one) vector corresponding to a “command” or a “vocabulary word” of a vocal speech recognition system. In other words, it is an ordinary use of the term “command” to refer to a word which is within the recognizer’s vocabulary since such words are often used as commands to initiate a response. Given the foregoing, Applicant’s respectfully request that the Examiner withdraw this objection.

The drawings were objected to for certain informalities. Specifically, Figure 1 is objected to for the misspelling of the word “Viterbi,” and Figure 2 is objected to for the misspelling of the word “processing.” Corrected drawings are submitted herewith.

The drawings were also objected to for failing to describe reference numerals 62-82 in Figure 3. The specification has been amended to add a new paragraph at page 6,

line 8 which references numerals 62-82. Support of the additional text can be found in Figure 3 and in the specification at page 4, lines 12-37. No new matter has been added.

No new matter has been included in the specification, abstract or drawings.

Prior to responding to the rejections over prior art, Applicants note that some of the claims have been amended to improve clarity. These amendments are not intended to limit the scope of the claims. The Examiner's objection to claim 2 has been obviated by the cancellation of claim 2, the subject matter of which is now incorporated into claim 1 with the Examiner's objection being addressed therein.

The Examiner inquired regarding possible discrepancies in the use of the adjectives "first" and "second." Applicants implied no substantively descriptive limitation by use of the adjectives "first" and "second" other than mere differentiation between nouns modified by "first" and nouns modified by "second" within a particular claim set. The adjectives are used to modify different nouns in different sets of claims, which provide different contexts. Thus, the use of the adjective "first" in one claim set, for example, should not be read into another claim set where the adjective "first" modifies a different noun. Using the terms thusly diminishes the temptation of the reader to impart incorrect connotations to those terms (e.g., incorrect connotations such as "priority" or "time order") when such connotations are not necessarily intended unless the context of the corresponding local claim language requires such connotations. Thus, Applicants agree that the claims should be examined verbatim, as the Examiner suggests.

Status of the Claims

Claims 1-11 were pending in the application prior to this amendment. Claims 1 and 3-10 stand rejected. Claims 2 and 11 stand objected to as being dependent on a rejected claim but would be allowable if rewritten in independent form.

Claims 1 and 10 have been amended to include the subject matter of allowable claims 2 and 11, respectively, allowing the cancellation of claims 2 and 11. Claim 8 has been canceled. Claims 1, 3-7, 9 and 10 are now pending.

Recognized Allowable Subject Matter

Applicants first note some discrepancies in the Office Action regarding which claims are allowable. The Office Action Summary page notes that claims 1 and 3-10 are rejected and claims 2 and 11 are objected to. Pursuant thereto, the body of the Office Action provides support for the rejection of claims 1 and 3-10. However, contrary to the Office Action Summary, the Office Action body states that claim 2 and *claim 9* are objected to. However, no basis for a rejection of claim 11 is presented, and claim 9 is referenced as being objected to with *quotes from claim 11*. Applicants are proceeding under the assumption that claims 2 and 11 are in fact objected to and that claim 9 is in fact rejected, as stated in the Office Action Summary. Applicants request that the Examiner confirm Applicants' assumption, or allow Applicants a chance to correct such assumption if such assumption is shown to be incorrect.

Appreciation is expressed for the indicated allowability of claims 2 and 11. In response, claims 1 and 10 have been amended to incorporate the subject matter of claims 2 and 11 to place those claims in condition for allowance. Their subject matter having been incorporated into other claims, claims 2 and 8 are accordingly canceled. Claims 3 and 4 depend from allowable claim 1, and are allowable for at least this reason.

Rejection of Claims under 35 U.S.C. §§ 102, 103

Claims 1 and 10 stand rejected under 35 U.S.C. §102(a) as being anticipated by U.S. patent No. 6,131,089 issued to William Campbell (the cited portions thereof hereinafter referred to as "the '089 patent"). Claims 1 and 3-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. patent No. 5,946,653 issued to William Campbell (the cited portions thereof hereinafter referred to as "the '653 patent") in view of the '089 patent. The Examiner's reconsideration of this rejection is respectfully requested.

As discussed above, claims 1 and 10 have been amended to incorporate the subject matter of allowable claims 2 and 11, respectively. Claims 1 and 10 are allowable

for at least this reason. Claims 3 and 4 depend from claim 1 and are allowable for at least this reason.

The present invention, as set forth by independent claim 5, relates to a method of identifying a spoken command. The method includes generating speech building blocks in a training mode that represent a language by providing a polynomial expansion of first higher-order vectors. In rejecting this limitation, the Examiner refers Applicants to column 10, line 6 of the '653 patent which recites the following:

Training processor (TP) 310 is preferably coupled to VQ 306, memory 320, and command model memory 312. In the preferred embodiment, TP 310 accepts feature vectors from VQ 306. TP 310 processes feature vector inputs to produce command models which represent spoken commands.

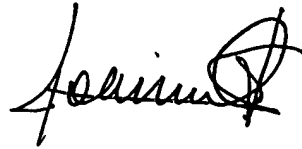
The cited text of the '653 patent thus refers to production of "command models which represent spoken commands." Claim 5, on the other hand, refers to generation of "speech building blocks" which may then be used to construct words or commands in a spoken language. (See Application, page 3, lines 4-5.) Thus, the cited text of Campbell seems to refer to a subsequent step wherein speech building blocks (pieces of a command) are combined into a spoken command, not to the generation of speech building blocks themselves, as recited in claim 5. Independent claim 5 is allowable for at least this reason. Claims 6, 6 and 9 depend from claim 5 and are allowable for at least this reason.

Conclusion

Claims 1, 3-7, 9 and 10 remain in the case. The rejection of claims 1-4 and 10 has been obviated by incorporation of allowable subject matter into the respective independent claims 1 and 10. The rejection of claims 5-9 has been traversed. Applicants have attempted to respond to each of the Examiner's objections to the Application through amendment and explanation.

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is requested to telephone Michael P. Noonan at (512) 996-6839.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Joanna G. Chiu', with a stylized flourish at the end.

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